


Power Supply

The power supply of this watch uses a solar cell to generate electrical power, which is stored by a rechargeable battery. Using or storing the watch where it is not regularly exposed to light, or allowing it to be blocked from light by your sleeve for long periods as you are wearing it can cause the power of the rechargeable battery to run down. To ensure stable operation, be sure to allow the watch to be exposed to light as much as possible when you are wearing or storing it.

Charging Precautions

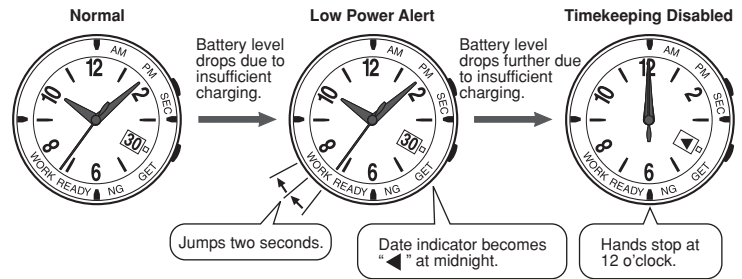
Avoid charging the watch in the following locations, and anywhere else where the watch may become very hot.

- On the dashboard of an automobile parked in the sun
- Very close to an incandescent light source or other sources of heat
- In a location exposed to direct sunlight for long periods



Depending on the light source you are using, the case of the watch may become quite hot during charging. Take care to guard against burn injury after charging.

Checking the Battery Level



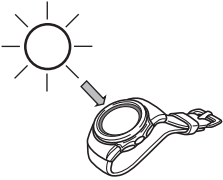
Normal	Normal operation
Low Power Alert	Time calibration signal reception disabled
Timekeeping Disabled	Timekeeping disabled

- Even after the battery drops to the level that timekeeping becomes disabled, you will be able to resume normal operation by charging the battery.
- After timekeeping becomes disabled, the hands will move to the current time after the battery is recharged sufficiently.
- Keep the watch exposed to light until normal operation returns.

To charge the battery

Point the solar cell (face) of the watch at a light source to charge the battery.

- Remember that even a partial blockage of the solar cell reduces charging efficiency.



Charging Guide

Starting from a full charge, the watch should be able to continue operating for about five months without further charging under the conditions described below.

Daily Use (All time values are approximate.)

- Signal reception: 6 minutes

Making sure the watch is regularly exposed to light ensures stable operation.

Required Daily Charging Time

- The following is the daily amount of charging required each day to support the operations under "Daily Use".

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	6 minutes
Sunlight Through a Window (10,000 lux)	30 minutes
Daylight Through a Window on an Overcast Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

Charge Times Required to Advance to a Higher Level

Exposure Level (Brightness)	Approximate Exposure Time	
	Timekeeping Restored	Full Charge
Outdoor Sunlight (50,000 lux)	1 hour	16 hours
Sunlight Through a Window (10,000 lux)	3 hours	78 hours
Daylight Through a Window on an Overcast Day (5,000 lux)	4 hours	---
Indoor Fluorescent Lighting (500 lux)	37 hours	---

- Note that the above charging times are for reference only. Actual charging time depends on a variety of environmental factors.

Power Saving

Power Saving puts the watch into a sleep state, which will cause the second hand to stop moving whenever the watch is left in the dark.

- Note that hand movement may stop if the watch is blocked from light by your sleeve.

How the sleep state works

The second hand stops whenever the watch is left in the dark for about 60 or 70 minutes between the hours of 10:00 p.m. and 6:00 a.m. Time calibration reception continues to be performed at this time. If the watch is left in the dark for an additional seven or eight days, the hour and minute hand also stop. Time calibration is not performed while the hour and minute hands are not moving.

- Timekeeping continues internally even when the hands are stopped.

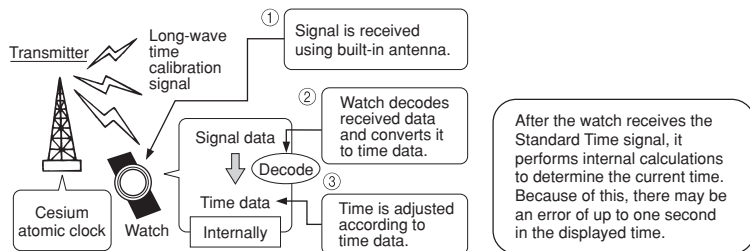
To recover from the sleep state

Move the watch to a brightly lit location or press any button, and the hands will move to the current time setting and resume timekeeping from there.

How a Radio-controlled Watch Works

What is a radio-controlled watch?

Your radio-controlled watch is designed to receive a time calibration signal that contains standard time data, and adjust its current time setting accordingly.



Calibration Signal

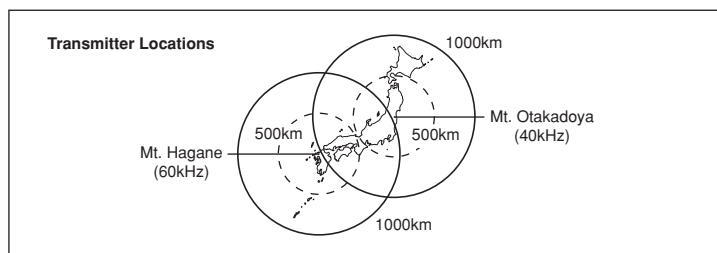
- The Japanese calibration signal (Call Sign: JJY) is maintained by the National Institute of Information and Communications Technology (NICT). It is a long wave signal transmitted 24 hours a day from the Mt. Otakadoya transmitter (40kHz) located in Tamura-gun, Fukushima Prefecture, and from the Mt. Hagane transmitter (60kHz) located on the border between Saga Prefecture and Fukuoka Prefecture.

Note that transmission of the time calibration signal may be interrupted occasionally due to maintenance, lightning, etc.

Reception Range

This watch is designed to receive either the Mt. Otakadoya signal (40kHz) or the Mt. Hagane signal (60kHz), whichever is strongest.

- Under optimum conditions, the calibration signal should be receivable up to 1,000 kilometers from the transmitter. Note that the wave is relatively weak at distances greater than 500km, so reception may be poor at long distances.
- Geographic contours, nearby buildings, seasonal conditions, the time of day, can even make reception impossible even when you are within range of the transmitter.
- Reception is best at night.



Location

Reception is difficult and may even be impossible in the locations described below. Avoid such locations when performing signal reception.

- You should think of your watch operating like a radio or TV when it is receiving the calibration signal.



Among or near buildings



Near high-voltage lines



Inside a vehicle (automobile, train, plane, etc.)



Next to a household appliance or office equipment (TV, speaker, fax, computer, cell phone, etc.)



In a location where there is radio interference (construction site, airport, etc.)



Near mountains

If you are experiencing problems with reception, move away from the types of locations described above to a location with better reception, and try again.

Receiving the Calibration Signal

There are two methods you can use to receive the time calibration signal.

Auto receive (Reception is performed automatically at midnight, 1:00, 2:00, 3:00 and 4:00 each morning.)

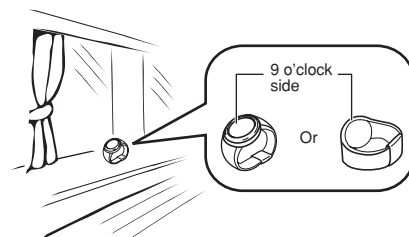
- Auto receive is terminated as soon a reception is successful.
- If auto receive is not successful for any of the normal auto receive operations shown above, auto receive is performed one more time at 5:00 a.m.
- Successful auto receive keeps timekeeping accurate.

Manual receive (You initiate reception using a button operation.)

To position the watch for optimum reception

Remove the watch from your wrist and place it somewhere so its right side (9 o'clock side, where the antenna is located) is facing a window.

- Do not move the watch while it is receiving the calibration signal.



Time Required for Reception

A calibration signal receive operation takes anywhere from about two to seven minutes.

To perform manual receive

In any mode, hold down the **B** button for about two seconds.

- The second hand will move to **READY**, and signal reception will start.



To interrupt reception

Press any button. This will cause the watch to return to the Timekeeping Mode.

When reception is successful

The watch will terminate reception and adjust the current time. Next the second hand will move to **GET**.

When reception is not successful

The second hand will move to **NG** (No Good), without adjusting the time setting.

- After the second hand is pointing at **GET** or **NG**, the watch will return to the Timekeeping Mode if you press any button or if you do not perform any operation for about one or two minutes.

Hand Operation During Signal Reception

Second Hand The second hand moves to **READY** when the reception operation starts, indicating that the watch is getting ready to receive. It points to **WORK** while actual reception is in progress.

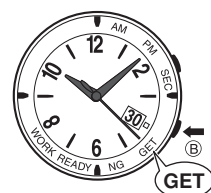
Hour and Minute Hands ... The hour and minute hands continue to operate normally.

Note that the second hand does not move during signal reception.

To check the result of the last signal receive operation

In the Timekeeping Mode, press the **B** button. This enters the Receive Result Mode.

- If the watch was able to perform a successful signal receive operation since midnight, the second hand will move to **GET**. If the watch has been unable to receive any signal successfully, the second hand will move to **NG**.
- To return to the Timekeeping Mode, press the **B** button twice.
- The watch will also return to the Timekeeping Mode if you do not perform any operation for about one or two minutes.



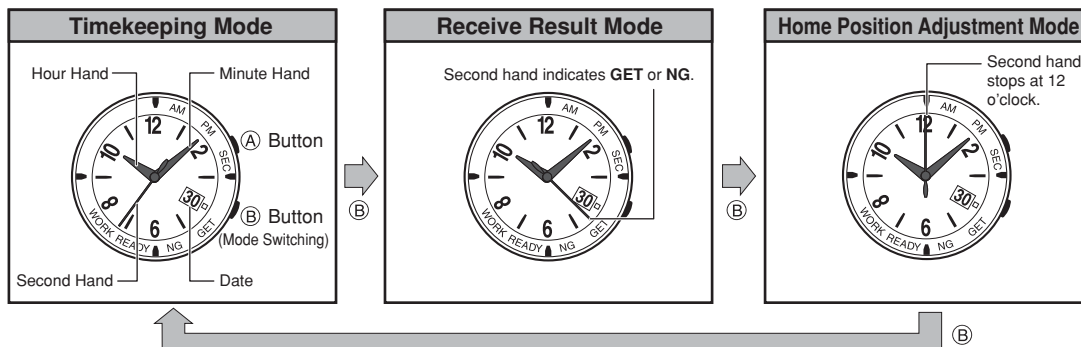
Calibration Signal Reception Precautions

- Auto reception can be performed while the watch is in the Timekeeping Mode only.
- If the hands become misaligned for some reason, they may not indicate the correct time, even if the time calibration signal is received normally. If this happens, use the procedure under "Adjusting Home Positions" to adjust the home positions of the hands and the date.
- Pressing any button while auto reception is in progress will cause reception to stop.
- This watch is designed to adjust its current time setting in accordance with the calibration signal transmitted in Japan only. It operates like a standard (non-radio controlled) watch outside of the range of the receivable time calibration signal transmitters.
- When the watch is unable to receive the time calibration signal for some reason, timekeeping accuracy is within ± 20 seconds per month.
- Proper reception may be impossible if there is something blocking the signal.
- The watch's calendar shows dates up to the year 2099. Attempting a receive operation after that causes an error.

Modes and Display Screens

Each press of the (B) button cycles through available modes in the sequence shown below.

- The display will automatically revert to the Timekeeping Mode if you leave it in another mode without performing any operation for about two or three minutes.



If the time setting is incorrect

Normally, you do not need to adjust the time setting of the watch as long as it is able to receive the time calibration signal. See "Receiving the Calibration Signal" for more information. If the time setting is off for some reason, use the Home Position Adjustment Mode to adjust the hands.

Adjusting Home Positions

Use the following procedure to adjust the home positions of the hands and the date when the time setting is wrong, even after the time calibration signal is received normally.

1. In the Timekeeping Mode, press the (B) button twice to enter the Home Position Adjustment Mode.

- If second hand alignment is correct, it should point directly at 12 o'clock.

2. To adjust the second hand home position, hold down the (A) button until the second hand performs a full rotation (about five seconds).

- If second hand alignment is correct, it should point directly at 12 o'clock.

If the second hand is pointing at 12 o'clock

Advance to step 3.

If the second hand is not pointing at 12 o'clock

Press the (B) button to move the second hand clockwise, until it points at 12 o'clock.

- Each press of the (B) button advances the second hand by one second.
- Holding down the (B) button for about two seconds advances the second hand at high speed. High-speed movement of the second hand will continue until it completes a full revolution, or until you press any button to stop it.

3. Press the (A) button to advance to hour and minute hand home adjustment.

- This will cause the hour and minute hands to move counterclockwise.
- If current hour and minute hand alignment is correct, they will both stop at 12 o'clock.

If the hour and minute hands are pointing at 12 o'clock

Advance to step 4.

If the hour and minute hands are not pointing at 12 o'clock

- If it is easier to adjust the hand home positions by moving them counterclockwise, advance to step 4.
 - If it is easier to adjust the hand home positions by moving them clockwise, use the (B) button to align them with 12 o'clock.
 - Each press of the (B) button moves the hand setting 10 seconds.
 - Holding down the (B) button for about two seconds advances the hands at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.
-

4. Press the (A) button.

- This will cause the minute hand to move counterclockwise about one or two minutes, and then stop around 12 o'clock.

If the hour and minute hands are pointing at 12 o'clock

Advance to step 5.

If the hour and minute hands are not pointing at 12 o'clock

Press the (B) button to move the hour and minute hands back, until it points at 12 o'clock.

- Each press of the (B) button moves the hand setting 10 seconds.
- Holding down the (B) button for about two seconds moves the hands back at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.

5. Press the (A) button to advance to date home position adjustment.

- The date indicator will show ◀ if the date home position is correct. Note that it can take up to 90 seconds before ◀ appears.

If ◀ appears for the date

Advance to step 6.

If ◀ does not appear for the date

Hold down the (B) button for about two seconds to start automatic high-speed scrolling of the date. The ◀ is located between 31 and 1. When the date gets close to 31, press the (B) button again to stop the scrolling. Press the (B) button to advance the date until ◀ appears.

6. Press the (A) button to return to the Timekeeping Mode.

- At this time the date indicator will start to scroll. When the date stops scrolling, the hour and minute hands start to move. Note that all of the watch buttons are disabled while the date is scrolling or the hour and minute hands are moving at this time.

After the hour and minute hands stop moving, press the (B) button.

- This returns to the Timekeeping Mode, and resumes normal second hand operation.

After you complete the home position adjustment procedure, place the watch in a location that allows good time calibration signal reception, and then perform a manual receive operation. See "To perform manual receive" for more information.

Manual Time Adjustment 1

You can perform the following procedures to adjust the time and date when the watch is unable to receive a time calibration signal for some reason.

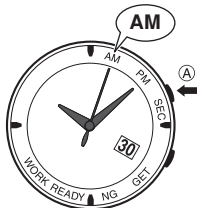
If you lose your way during manual time adjustment

If you become confused and lose your way during the following procedures, simply put the watch down and do not perform any button operation for two or three minutes. This will cause the watch to enter the Timekeeping Mode (indicated by normal one-second movement of the second hand) automatically. After that, you can try performing the manual setting procedure again from the beginning.

■ To reset the second hand manually

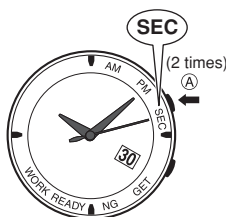
1. **In the Timekeeping Mode, hold down the (A) button for about five seconds until the second hand stops at AM or PM.**

- This is the manual setting mode.
- Note that the hands of the watch do not move in the manual setting mode.
- If you do not perform any button operation for about two or three minutes, the watch will exit the manual setting mode and normal hand movement will resume.



2. **Press the (A) button twice.**

- This will cause the second hand to move to SEC.



3. **In accordance with a time signal on the TV or radio, press the (B) button.**

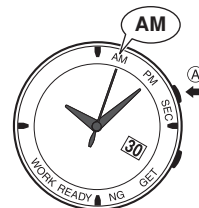
- This will increase the minute setting by one and restart the seconds count from 00.
- In Japan, you can obtain the current time by dialing 117 on the telephone.



■ To set the hour and minute manually

1. **In the Timekeeping Mode, hold down the (A) button for about five seconds until the second hand stops at AM or PM.**

- Note that the hands of the watch do not move in the manual setting mode.
- If you do not perform any button operation for about two or three minutes, the watch will exit the manual setting mode and normal hand movement will resume.
- Pressing the (A) button and the (B) button at the same time in the manual setting mode will cause the hands to move to the original (unadjusted) time setting. Then the watch will return to the Timekeeping Mode.



2. **Use the operation described below to move the hands clockwise.**

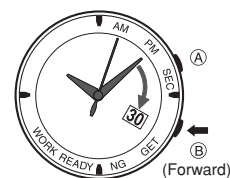
To move the hands counterclockwise

Advance to step 3.

To move the hands clockwise

Press the (B) button to move the hands clockwise by one minute.

- Holding down the (B) button for about two seconds moves the hands clockwise at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.



- After setting the time you want, press the (A) button to advance to step 4.

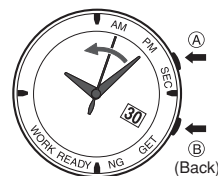
3. **Use the operation described below to move the hands counterclockwise.**

Press the (A) button.

- This will cause the minute hand to move counterclockwise about one or two minutes, and then stop around 12 o'clock.

Press the (B) button to move the hands counterclockwise by one minute.

- Holding down the (B) button for about two seconds moves the hands counterclockwise at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.



4. **To return to the Timekeeping Mode, press the (A) button six times.**

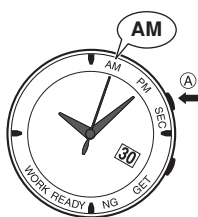
- This will cause the hands to move to the current time, and resume normal movement.

Manual Time Adjustment 2

You can perform the following procedures to adjust the time and date when the watch is unable to receive a time calibration signal for some reason.

■ To adjust the date

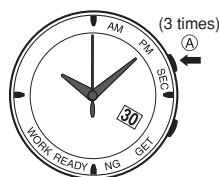
1. In the Timekeeping Mode, hold down the (A) button for about five seconds until the second hand stops at AM or PM.



- Note that the hands of the watch do not move in the manual setting mode.
- If you do not perform any button operation for about two or three minutes, the watch will exit the manual setting mode and normal hand movement will resume.

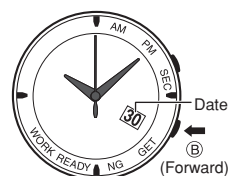
2. Press the (A) button three times.

- The second hand will move to 12 o'clock.



3. Press of the (B) button to advance date by one.

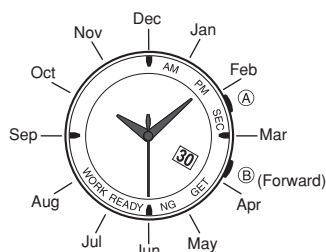
- If the watch automatically skips the end of the month date (30 or 31) you are trying to set, first perform the steps below to change the month setting and then come back to adjust the date setting.



4. Press the (A) button.

- This will cause the second hand to move to the current month setting.

5. Press the (B) button to advance the month by one.

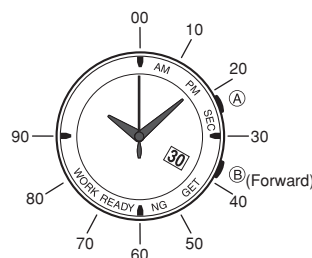


6. Press the (A) button.

- This will cause the second hand to move to the ten's digit of the year setting.

7. Press the (B) button to increase the ten's digit setting by one.

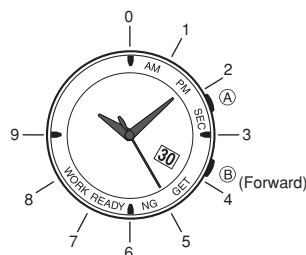
- You can set the year within the range of 2000 to 2099.



8. Press the (A) button.

- This will cause the second hand to move to the one's digit of the year setting.

9. Press the (B) button to increase the one's digit setting by one.



10. Press the (A) button.

- This returns to the Timekeeping Mode.
- This will cause the hands to move to the current time, and resume normal movement.
- The watch automatically makes adjustments for leap years and month lengths. The date will change automatically when the current time reaches midnight. The date change at the end of the month may take more time than normal.